UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-0116-RI

September 26, 2000

Mr. Fred Patron
Federal Highway Administration
The Equitable Center, Suite 100
530 Center Street NE
Salem, OR 97301

Re: Reinitiation of Formal Section 7 Consultation on the Lexington - Echo Highway Bridges Project, Umatilla County, Oregon

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the Lexington - Echo Highway Bridges Project in Douglas County, Oregon. The NMFS concludes in this Opinion that the proposed action is not likely to jeopardize the subject species or destroy or adversely modify critical habitat. Pursuant to section 7 of the ESA, NMFS includes reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

Questions regarding this Opinion should be directed to Nancy Munn of my staff in the Oregon State Branch Office at (503) 231-6269.

Sincerely,

for Michael R Crouse

Donna Darm
Acting Regional Administrator

cc: Rose Owens - ODOT
Randy Floyd - ODOT (BiOp)
Chuck Howe - ODOT Region 5 (BiOp)
Julie Bunnell - ODFW (BiOp)
Ken Eddy - D-12 Project Team Leader
Tony George - D-12 Construction Project Manager
Art Martin - Oregon Department of Fish and Wildlife (BiOp)
Robert Rose - U.S. Army Corps of Engineers (BiOp)

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Lexington - Echo Highway Bridge Project
Umatilla County, Oregon

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: September 26, 2000

Refer to: OSB1998-0116-RI

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I. BACKGROUND

On December 11, 1998, the National Marine Fisheries Service (NMFS) completed an Endangered Species Act (ESA) section 7 informal conference with Oregon Department of Transportation (ODOT) for the Lexington - Echo Highway Bridges project (OSB1998-0116). NMFS concurred that the proposed action was not likely to adversely affect middle Columbia River steelhead because impacts within the two-year floodplain were predicted to be minimal and adverse affects to steelhead were not expected. Project construction began in 1999 and is scheduled to be completed in the fall of 2000. As part of this action, a new bridge was constructed in the City of Echo north of the old bridge alignment. Demolition of the old bridge began prior to the in-water work window this past summer. The NMFS visited the site on July 10, 2000, and observed bridge demolition practices that were not consistent with the action described in the biological assessment. Large pieces of concrete and other materials including fine dust were dropped directly onto the dry river gravels. An excavator was picking up the gravels and was dropping them into a dump truck. Small spots of oil and grease from vehicles in the floodplain were also observed. On August 8, 2000, NMFS sent the Federal Highway Administration (FHWA) a letter outlining the non-compliance issues. On August 31, 2000, NMFS received a request for formal consultation from the Federal Highway Administration (FHWA) to address impacts during the remainder of the bridge demolition at the site. The FHWA is funding the proposed action, and ODOT is the project applicant.

The Echo Bridge is located over the Umatilla River in the City of Echo, Umatilla County, Oregon. The FHWA/ODOT proposes to complete demolition of the bridge over the wetted part of the channel. First, ODOT will construct a containment structure under the bridge to catch falling material. Pier #1, #2 and Abutment #1 will be removed from the stream channel using sheet pile to isolate the work area from the flowing water and silt curtains to minimize turbidity downstream.

The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The FHWA/ODOT determined that the proposed action was likely to adversely affect the middle Columbia River (MCR) steelhead.

This biological opinion (Opinion) is based on the information presented in the biological assessment (BA) and the result of the consultation process. The consultation process has involved several site visits, and correspondence and communications to obtain additional information and clarify the BA. As appropriate, modifications to the proposal to reduce impacts to the indicated species were discussed and enacted. This has included discussions concerning containment measures to catch falling demolition material and appropriate site remediation activities.

The objective of this Opinion is to determine whether the action to demolish the remainder of the Echo Bridge and subsequent site remediation is likely to jeopardize the continued existence of the middle Columbia River steelhead, or destroy or adversely modify critical habitat.

II. PROPOSED ACTION

The FHWA/ODOT plans to complete demolition of the Echo bridge over the wetted part of the channel. Prior to bridge demolition, an 18-foot wide work bridge will be constructed across the flowing channel on the south side of the old bridge. The work bridge will allow equipment and vehicles access to the bridge without getting in the water. A 36-foot wide containment structure will then be constructed between Pier #1 and Pier #2 of the old bridge. The floor of the containment structure will be constructed of I-beams spanning the channel and covered with planks and one-inch plywood. The side of the containment structure will be built with four-foot high walls to prevent any falling debris from bouncing off the structure and into the water. A ramp will be constructed using geotextile fabric and clean non-erodible material at the east end of the containment deck.

Once the containment structure is in place, the second span of the bridge will be removed. Demolition debris will fall on the containment structure, and be removed from there. Upon completion, the containment structure will be removed.

Next, the remaining bridge piers and abutment will be removed. To do this, sheet pile and floating silt curtains will be installed around the two, Pier #2 columns. Water that collects inside the sheet piles will be pumped to a settling pond located outside the two-year flood elevation in a stable upland area. The columns will be removed by breaking or cutting off or uprooting below the active channel elevation. The dry gravels will be covered with a tarp or plastic sheeting during this work to prevent demolition material from getting into the river gravel. The sheet piles will be removed, and the silt curtain will be removed once water quality returns to background levels. Span #1, Pier #1 and Abutment #1 will be removed using the same method.

Once all the bridge materials have been removed from the site, the plantings and upland stabilization will be completed as described in the biological assessment. Native grasses, shrubs and trees will be planted in the disturbed riparian zone. Access to the site will be from along an existing access route of the northeast side of the new bridge. Access along the gravel bar will be done in the dry, and minimized to the greatest extent practicable.

Project activities should be completed by the end of the in-water work period on October 15, 2000. However, the contractor may not be able to complete the proposed action in this time period. In that event, bridge demolition will be conducted after July 15, 2001. To stabilize the site for the winter of 2000/2001, any exposed soil will be stabilized with seeding. The work site will be cleaned, including the removal of all concrete rubble.

III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The MCR steelhead Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by the NMFS on March 25, 1999 (64 FR 14517). Biological information concerning the MCR steelhead is found in Busby et al. (1995, 1996). Critical habitat was designated for the MCR steelhead on February 16, 2000 (65 FR 7764). Critical habitat for MCR steelhead includes the major Columbia

River tributaries known to support this ESU including the Deschutes, John Day, Klickitat, Umatilla, Walla Walla, and Yakima Rivers, as well as the Columbia River and estuary. The adjacent riparian zone is included in this designation. The riparian zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, input of large woody debris or organic matter, and others. Protective regulations for MCR steelhead were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42423), and became effective on September 8, 2000.

IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of defining the biological requirements and current status of the listed species and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize the listed or proposed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' proposed or designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent measures available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

A. Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NMFS starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination (Busby et al., 1995, 1996).

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environmental. For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration, spawning, holding, and rearing.

B. Environmental Baseline

The current range-wide status of the identified ESU may be found in Busby et al. (1995, 1996). The proposed action will occur within the range of MCR steelhead. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities include the immediate watershed containing the site and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and streambank of the Umatilla River extending upstream to the edge of disturbance, and extending downstream 500 feet. It is anticipated that an increase in turbidity should not be detected more than 500 feet downstream of the site. Other areas of the Umatilla River watershed are not expected to be directly or indirectly impacted.

The MCR steelhead do not presently spawn in the reach of the Umatilla River at the Echo Bridge. However, suitable steelhead spawning gravels are present beneath the bridge, and steelhead could spawn there in the future. In the project reach, steelhead smolts over-winter and adults migrate to and from the ocean. Outmigration of smolts occurs from March through June, and then again from October through December. Low flows and high water temperatures likely preclude steelhead presence at the site from July through September.

Recent average adult abundance for the Yakima, Walla Walla, Umatilla, John Day and Deschutes river basins combined has been estimated at 13,400 adults (compared to a historical run size estimate of 100,000 fish in the Yakima River alone). Natural steelhead escapement in the Yakima and Umatilla rivers has dropped to as low as 500 fish in some years, and steelhead are now extinct in the Crooked and Metolius rivers. Increasing proportions of hatchery fish in the Deschutes, John Day and Umatilla rivers pose genetic and ecological problems to remaining natural fish. Habitat blockages, reductions in

streamflow and water quality, and mortality passing hydroelectic dams pose significant impacts to these fish.

Based on the best available information on the current status of MCR steelhead range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. The Umatilla River basins has degraded habitat resulting from agricultural and forestry practices, water diversions, urbanization, and mining. The following habitat indicators are either at risk or not properly functioning within the action area: temperature, turbidity/sediment, chemical contamination/nutrients, large woody debris, off-channel habitat, streambank condition, floodplain connectivity, changes in peak/base flows, and disturbance history. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of MCR steelhead.

V. ANALYSIS OF EFFECTS

A. Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of actions are expressed in terms of the expected effect - restore, maintain, or degrade - on aquatic habitat factors in the project area.

Project activities to demolish the bridge and remove the demolition debris will require work within the active stream channel (where water is flowing). Steelhead are not generally present at the bridge demolition site during the in-water work period (July 15th to October 15th) because of high water temperatures and low flow. Adult steelhead migrate upriver beginning in the fall. Also, steelhead smolts outmigrate from October through December, and then March through June. After the in-water work window, water is released into the Umatilla River from irrigation diversions upstream. The increased water levels serve to attract the migrating salmon. Therefore, the potential for direct take is low; in-water activities may displace any early migrants through the project area.

Project activities will require additional activities within the two-year floodplain, including activities on the dry river gravels. This part of the channel dries up every year following the irrigation diversions. Although not currently used for steelhead spawning, there is potential for future use. Vehicles moving on the gravels will increase the compaction and reduce its suitability as spawning habitat. Construction of the ramp for the equipment crossing bridge will cause some movement of the gravel and could result in some of the ramp material getting into the flowing channel. This could degrade water quality and reduce habitat suitability for rearing and spawning steelhead. Demolition and removal of the piers and span will result in some fine dust and perhaps larger debris falling on the gravels and in the water.

Again, this will affect water quality and habitat function. In addition, water levels in the Umatilla River could rise unexpectedly, resulting in demolition debris or contaminants getting into the flowing channel.

Spills or leaks of oil or grease onto the gravels from vehicles are possible. Spills can be toxic to fish. Conservation measures described in the biological assessment will reduce the risk of a spill or leak.

Riparian vegetation near Span #1 and Abutment #1 will be damaged or removed during demolition. Removal of riparian vegetation reduces riparian functions such as bank stability, reduction in overland flow, shade, temperature control, organic material and large wood inputs, and habitat for insects. Plantings will restore function, but it will take five to ten years before some function is realized.

For the proposed action, the NMFS expects that habitat elements will be maintained or restored over a period of time greater than 10 years. In the short term, a temporary increase in sediment entrainment and turbidity, and disturbance of riparian habitat is expected. Fish may be killed, or more likely, temporarily displaced if fish are in the project reach earlier than expected. The potential effects from the sum total of proposed actions including riparian plantings are expected to restore or maintain the function of steelhead habitat condition.

B. Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for MCR steelhead consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter.

The proposed actions will affect critical habitat. In the short term, a temporary increase of sediments and turbidity and disturbance of riparian habitat is expected. In the long term, a slow recovery process will occur as the plants mature. The NMFS does not expect that these actions will diminish the value of the habitat for survival of MCR steelhead.

C. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area has been defined as upstream to the edge of disturbance extending 500 feet downstream of the bridge. A wide variety of actions occur within the Umatilla River basin, within which the action area is located. NMFS is not aware of any significant change in such non-Federal activities that are reasonably certain to occur. NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Future FHWA/ODOT transportation projected are planned in the Umatilla River watershed. Each of these projects will be

reviewed through separate section 7 consultation processes and therefore are not considered cumulative effects.

VI. CONCLUSION

After reviewing the current status of middle Columbia River steelhead, the environmental baseline for the action area, the effects of the proposed demolition of the Echo Bridge and the cumulative effects, it is the NMFS biological opinion that this project, as proposed, is not likely to jeopardize the continued existence of the middle Columbia River steelhead, and is not likely to destroy or adversely modify designated critical habitat. This conclusion is based on findings that
the proposed action will minimize the potential for direct take by conducting in-water work during the recommended in-water work window, using a containment system to prevent most demolition materials from entering the flowing channel, and planting native shrubs and trees in the riparian zone.

VII. CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS does not request any conservation recommendations for this action.

VIII. REINITIATION OF CONSULTATION

This concludes formal consultation on the Lexington - Echo Highway Bridges Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: 1) The amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or 4) a new species is listed or critical habitat is designated that may be affected by the action. In instances
where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

IX. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

Busby, P., S. Grabowski, R. Iwamoto, C. Mahnken, G. Matthews, M. Schiewe, T. Wainwright, R. Waples, J. Williams, C. Wingert, and R. Reisenbichler. 1995. Review of the status of steelhead (*Oncorhynchus mykiss*) from Washington, Idaho, Oregon, and California under the U.S. Endangered Species Act. 102 p. plus 3 appendices.

Busby, P., T. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, and I.V. Lagomarsino. 1995. Status review of west coast steelhead from Washington, Idaho, Oregon, and California.

DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

DEQ 1998. Draft 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1998. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

DSL 1996. Essential Indigenous Salmonid Habitat, Designated Areas, (OAR 141-102-030). Oregon Division of State Lands. Portland, Or. 1996.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

ODFW 1996. Database -- Salmonid Distribution and Habitat Utilization, Arc/Info GIS coverages. Portland, Or. 1996. (rainbow.dfw.state.or.us/ftp/).

X. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with
the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and

sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of MCR steelhead because of detrimental effects from increased sediment levels and potential impacts to habitat resulting in behavioral changes. Effects of actions such as these are largely unquantifiable in the short-term, and are not expected to be measurable as long-term effects on coho habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological report, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to the reach of the Umatilla River immediately beneath and downstream of the bridge.

B. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from bridge demolition activities at the Echo Bridge over the Umatilla River, measures shall be taken to limit the duration and extent of in-water work, and to schedule such work when the fewest number of fish are expected to be present.

2. To minimize the amount and extent of incidental take from construction activities near the creek, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within the river, and to stabilize bare soil over both the short term and long term.

3. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to avoid impacts to riparian and instream habitat, or where impacts are unavoidable, to replace lost riparian and instream function.

4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures and plantings for site restoration shall be monitored and evaluated both during and following construction.

C. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To Implement Reasonable and Prudent Measure #1, above, the FHWA/ODOT shall be required to complete the following:

    a. All work within the two-year floodplain of the Umatilla River will be done during the ODFW in-water work window of July 15th to October 15th. This includes work to construct and remove the containment structure and remove demolition material.

    b. The containment structure will be used to contain demolition material. While 100% containment is not expected, FHWA/ODOT is expected to monitor the effectiveness of the containment structure and modify as necessary to prevent concrete and concrete dust from falling in the river. Measures shall be reviewed and monitored by the Engineer.

2. To Implement Reasonable and Prudent Measure #2, above, the FHWA/ODOT shall be required to complete the following:

All erosion control and pollution control measures included in the previous consultation and in the August, 2000, BA are included as terms and conditions of this consultation. Based on experiences this year, the NMFS requires ODOT to give particular attention to the following measures:

    a. Vehicle maintenance, re-fueling of vehicles and storage of fuel shall be done at least 150 feet from the 2-year flood elevation or in an adequate fueling containment area. To be considered adequate, the fueling containment area must be a bermed area that is constructed before any refueling occurs. The bermed area will be used for refueling of all heavy equipment. This area will be lined with non-permeable material to catch any spilled material and have a berm large enough to contain 100% of the material. Before laying down the non-permeable material, all sharp rock will be removed from the area, and 2 to 4 inches of soil will be laid as a base to insure the non-permeable material is not punctured. The non-permeable material will then be laid down, and covered with a 4-inch layer of sand/soil to prevent damage to the non-permeable material from the equipment. If any spills should occur, they will be cleaned up immediately. There will be a minimum 2% grade toward the back of the containment area so that any spilled material will flow to the back of the spill containment area.

    b. At the end of each work shift, vehicles shall be stored greater than 150 feet (horizontal distance) from the 2-year flood elevation, or in an area approved by the Engineer.

c. The contractor shall develop an erosion and sediment control plan for this project. The plan may be developed and submitted in stages for each type of work required. Each type of work will not begin until the Engineer approves the erosion and sediment control plan. The minimum anticipated erosion and sediment control measures for the construction work shown on the plans include: Seeding of disturbed slopes with the permanent seed mix, install straw wattles on disturbed slopes, construct check dams on the quarry bench access road, and maintain existing sediment detention ponds.

d. All erosion control devices will be inspected daily during project activities to ensure that they are working adequately. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional controls will be installed as necessary.

e. If soil erosion and sediment resulting from construction activities is not effectively controlled, the Engineer will limit the amount of disturbed area to that which can be adequately controlled.

3. To Implement Reasonable and Prudent Measure #3, above, the FHWA/ODOT shall be required to complete the following:

a. Boundaries of the clearing limits will be flagged by the Project Inspector. Ground will not be disturbed beyond the flagged boundary.

b. The FHWA/ODOT will ensure that the contractor will minimize the number of vehicles moving around on the dry river gravels or parked on the gravels. The purpose is to minimize compaction of the gravels, to minimize the potential for a hazardous fluid spill or leak, and to reduce the generation of fine sediment that could increase river turbidity when the river level rises and could reduce the viability of the gravels for spawning.

c. After one year of plant establishment, a biologist shall review the adequacy of plantings to ascertain whether the plants will function as desired to restore riparian function at the site. The adequacy will be addressed in the monitoring report as described below. If not adequate, additional native plants will be planted.

d. Gravels from the site will not be used to construct the ramp for the equipment crossing bridge or demolition containment structure.

4. To Implement Reasonable and Prudent Measure #4, above, the FHWA/ODOT shall required to complete the following:

a. All significant riparian replant areas will be monitored for a minimum 3-year period to insure the following:

i. Finished grade slopes and elevations will perform the appropriate role for which they were designed.

ii. Plantings are performing correctly and have an adequate success rate. An adequate success rate is 90%.

b. Failed plantings and structures will be replaced, if replacement would potentially succeed. If not, plantings at another appropriate locations will be done.

c. By December 31 of each year, ODOT shall submit to NMFS (Oregon Branch) a monitoring report that addresses the success of erosion control measures and of the plantings. At a minimum, the monitoring report must include photographs of the erosion control measures and plantings, with a short narrative that addresses riparian function. Monitoring reports will be submitted to:

Oregon State Branch Chief
National Marine Fisheries Service
525 NE Oregon Street, #500
Portland, Oregon 97232-2737

d. If a dead, sick or injured MCR steelhead is located, initial notification must be made to Nancy Munn, Ph.D., NMFS, telephone: (503) 230-6269. Care will be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured species or preservation of biological material from a dead animal, the finder has the responsibility to carry out instruction provided by Dr. Munn to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.